

What is claimed is:

1 1. A method for interactive visual analysis of  
2 interactions among entities, where entities are  
3 individuals or groups, which comprises:  
4 collecting interaction data;  
5 processing said collected interaction data with  
6 connectivity and diversity measures; and  
7 displaying said processed interaction data and  
8 appropriate raw interaction data for interaction analyses.

1 2. The method of claim 1, wherein said collecting  
2 interaction data comprises use of network surveys.

1 3. The method of claim 1, wherein said collecting  
2 interaction data comprises monitoring of e-mail traffic.

1 4. The method of claim 1, wherein said collecting  
2 interaction data comprises monitoring of telephone traffic.

1 5. The method of claim 1, wherein said collecting  
2 interaction data comprises monitoring of access to shared  
3 resources.

1           6.    The method of claim 1, wherein said connectivity  
2    measure is a recursive mathematical algorithm that employs  
3    a decay factor to account for the effects of indirect  
4    interactions among entities.

1           7.    The method of claim 6, wherein said connectivity  
2    measure employs the following mathematical formula:

3                   
$$C(E, L) = \sum_{1 \leq k \leq N} [w(k) + C(k, L-1)/f_d]$$
  
4                   
$$C(E, 0) = 0$$

5           where C (E,L) denotes connectivity of entity E at  
6    depth L where E has N direct interactions, w(k) is the  
7    weight of direct interactions from k, and f<sub>d</sub> is the decay  
8    factor.

1           8.    The method of claim 1, wherein said diversity  
2    measure is a recursive mathematical algorithm that employs  
3    a decay factor to account for the effects of indirect  
4    interactions among entities.

1           9.    The method of claim 8, wherein said diversity  
2    measure employs the following mathematical formula:

3                   
$$D(E, L) = \sum_{1 \leq k \leq N} [v(k, p) + D(k, L-1)/f_d]$$
  
4                   
$$D(E, 0) = 0$$

5        where,  $D(E,L)$  denotes diversity of entity E at depth L  
6        where E has N direct interactions, and  $v(k,p) = 0$  if the  
7        property of k along the diversity dimension of interest is  
8        already within p, where p is a set of properties  
9        encountered so far, including the property of E or  
10       otherwise,  $v(k,p) = 1$ .

1        10. The method of claim 1, wherein said displaying  
2        said processed interaction data comprises generating an  
3        organization view where interactions among entities of an  
4        organization are represented graphically.

1        11. The method of claim 1, wherein said displaying  
2        said processed interaction data comprises generating a  
3        group view where entities of a predefined group and their  
4        pre-specified attributes are represented graphically.

1        12. The method of claim 1, wherein said displaying  
2        said processed interaction data comprises generating an  
3        individual view where interactions relating to a specific  
4        entity are represented graphically.

1        13. The method of claim 1, wherein said displaying  
2        said processed interaction data comprises generating a

3 cluster view where interactions among predefined units of  
4 entities are represented graphically.

1 14. The method of claim 1, wherein said displaying  
2 said processed interaction data comprises generating a  
3 people map where said connectivity and diversity measures  
4 for predefined units of entities are represented  
5 graphically.

1 15. The method of claim 1, wherein said displaying  
2 said processed interaction data comprises generating a  
3 topical view where the view generated is dependent upon a  
4 predetermined interaction topic.

1 16. The method of claim 1, which further comprises  
2 generating a report based on results of the interaction  
3 analysis.

1 17. A system for interactive visual analysis of  
2 interactions among entities, where entities are individuals  
3 or groups, which comprises:  
4 a computer having a microprocessor and a storage unit;

5 a database electronically coupled to said computer for  
6 storing interaction data, auxiliary information and any  
7 additional data derived from said interaction data;

8 algorithms stored in said storage unit and operable by  
9 said microprocessor for measuring connectivity and  
10 diversity of entities based on their interactions;

11 a set of programs for accessing interaction data and  
12 generating views dynamically;

13 a display screen electronically coupled to said  
14 computer for providing a user interface, said user  
15 interface providing appropriate controls for displaying and  
16 interactively manipulating each generated view;

17 a user input device electronically coupled to said  
18 computer; and

19 a user selectable element of said user interface being  
20 responsive to user input via said user input device to  
21 generate a report based on analysis results.